AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of producing a microstructured optical fiber from a ~~perform~~ monolithic preform formed from optically suitable polymeric material, said method including the steps of:

creating a plurality of zones of relatively high refractive index at predetermined locations in said ~~perform~~ monolithic preform, said zones substantially surrounded by material of relatively low refractive index to create an array of light guiding cores, and

subsequently drawing said ~~perform~~ monolithic preform to create a length of said microstructured optical fiber.

2. (Original) The method as claimed in claim 1 wherein said light guiding cores are surrounded substantially by air.

3. (Previously Presented) The method as claimed in claim 1 wherein said light guiding cores have a generally non-circular cross-sectional shape.

4. (Cancelled)

5. (Currently Amended) The method as claimed in claim 1 wherein a plurality of holes is drilled into said ~~perform~~ monolithic preform at said predetermined locations to create said zones of relatively high refractive index.

6 (Currently Amended) The method as claimed in claim 1 wherein said ~~perform~~ monolithic preform is drawn to form said microstructured optical fiber in a two-stage drawing process.

7. (Currently Amended) A method of producing a microstructured optical fiber from a ~~perform~~ monolithic preform, said method including the steps of:

creating channels of relatively low refractive index at predetermined locations in said ~~perform~~ monolithic preform, said channels acting to define light guiding cores, and

subsequently drawing said ~~perform~~ monolithic preform to create a length of said ~~microstructed~~ microstructured optical fiber

8. (Currently Amended) The method as claimed in claim 7 wherein a plurality of holes is drilled into said ~~perform~~ monolithic preform at said predetermined locations to create said channels.

9. (Currently Amended) The method as claimed in claim 7 wherein said ~~perform~~ monolithic preform is drawn to form said microstructured optical fiber in a two-stage drawing process.

10. (Cancelled)

11. (Currently Amended) A microstructured optical fiber produced from a monolithic preform formed from optically suitable polymeric material, said optical fiber including a plurality of air channels, said air channels acting to define light guiding cores between said air channels

12. (Currently Amended) A microstructured optical fiber for imaging applications produced from a monolithic preform formed from optically suitable polymeric material, said optical fiber including air channels which act as light guiding cores.